Claims

We claim:

1. A single use processing substrate, comprising:
providing a surface capable of withstanding cutting by a serrated knife without substantial compromise of the sheet, a liquid impervious barrier and a liquid absorbent portion disposed adjacent the surface.

2. The processing substrate of claim 1, wherein the liquid absorbent portion is disposed between the surface and the liquid impervious barrier.

3. The processing substrate of claim 2, wherein the surface is formed by a layer of thermoplastic resin.

4. The processing substrate of claim 3, wherein the layer of thermoplastic resin comprises a discontinuous pattern of material.

5. The processing substrate of claim 4, wherein the thermoplastic resin is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

6. The processing substrate of claim 3, wherein the layer of thermoplastic resin comprises a continuous film of material having holes formed therein.

7. The processing substrate of claim 6, wherein the holes in the continuous film are formed by punching.

8. The processing substrate of claim 6, wherein the holes in the continuous film are formed by perforating.

9. The processing substrate of claim 1, wherein the liquid absorbent portion comprises cellulosic material.

10. The processing substrate of claim 9, wherein the cellulosic material comprises tissue.

11. The processing substrate of claim 1, wherein the liquid impervious barrier is formed by a layer of thermoplastic resin.

12. The processing substrate of claim 11, wherein the layer of thermoplastic resin comprises a continuous sheet of material.

13. The processing substrate of claim 12, wherein the thermoplastic resin is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

14. A single use processing substrate, comprising:
a cut-resistant surface comprising a continuous film having holes formed therein, a liquid absorbent portion disposed adjacent the cut-resistant surface and a liquid impervious barrier surface opposite the cut-resistant surface.

15. The processing substrate of claim 14, wherein the liquid absorbent portion is disposed between the cut-resistant and barrier surfaces.

16. The processing substrate of claim 14, wherein the cut-resistant surface is formed by a layer of thermoplastic resin.

17. The processing substrate of claim 16, wherein the thermoplastic resin is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

18. The processing substrate of claim 14, wherein the holes in the continuous film are formed by punching.

19. The processing substrate of claim 14, wherein the holes in the continuous film are formed by perforating.

20. The processing substrate of claim 14, wherein the liquid absorbent portion comprises cellulosic material.

21. The processing substrate of claim 20, wherein the cellulosic material comprises tissue.

22. The processing substrate of claim 14, wherein the barrier surface is formed by a layer of thermoplastic resin.

23. The processing substrate of claim 22, wherein the layer of thermoplastic resin comprises a continuous sheet of material.

24. The processing substrate of claim 23, wherein the thermoplastic resin is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

25. A disposable processing substrate, comprising:

a first material having a liquid-permeable, cut resistant surface capable of withstanding cutting by a serrated knife without substantial compromise of the first material;

a second material disposed adjacent the first material and having a liquid-absorbent portion; and

a third material disposed adjacent the second material and having a liquid-impermeable portion.

26. The processing substrate of claim 25, wherein the first and third materials comprise layers of thermoplastic resin.

27. The processing substrate of claim 25, wherein the first, second and third materials form first, second and third layers, respectively.

28. The processing substrate of claim 25, wherein the first material is formed by a layer of thermoplastic resin.

29. The processing substrate of claim 28, wherein the layer of thermoplastic resin comprises a discontinuous pattern of material.

30. The processing substrate of claim 29, wherein the thermoplastic resin is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

31. The processing substrate of claim 28, wherein the layer of thermoplastic resin comprises a continuous film of material having holes formed therein.

32. The processing substrate of claim 31, wherein the holes in the continuous film are formed by punching.

33. The processing substrate of claim 31, wherein the holes in the continuous film are formed by perforating.

34. The processing substrate of claim 27, wherein the second material comprises cellulosic material.

35. The processing substrate of claim 34, wherein the cellulosic material comprises tissue.

36. The processing substrate of claim 27, wherein the third material comprises a layer of thermoplastic resin.

37. The processing substrate of claim 36, wherein the layer of thermoplastic resin comprises a continuous sheet of material.

38. The processing substrate of claim 37, wherein the thermoplastic resin is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

39. A single-use processing substrate, comprising:

first means for providing a liquid-permeable, cut resistant surface capable of withstanding cutting by a serrated knife without substantial compromise of the processing substrate;

second means disposed adjacent the first providing means for providing a liquid-absorbent portion; and

third means disposed adjacent the second providing means for providing a liquid-impermeable portion.

40. The processing substrate of claim 39, wherein the first means comprises a layer of thermoplastic resin.

41. The processing substrate of claim 40, wherein the layer of thermoplastic resin comprises a discontinuous pattern of material.

42. The processing substrate of claim 41, wherein the thermoplastic resin is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

43. The processing substrate of claim 39, wherein the layer of thermoplastic resin comprises a continuous film of material having holes formed therein.

44. The processing substrate of claim 43, wherein the holes in the continuous film are formed by punching.

45. The processing substrate of claim 43, wherein the holes in the continuous film are formed by perforating.

46. The processing substrate of claim 39, wherein the second means comprises cellulosic material.

47. The processing substrate of claim 46, wherein the cellulosic material comprises tissue.

48. The processing substrate of claim 39, wherein the third means comprises a layer of thermoplastic resin.

49. The processing substrate of claim 48, wherein the layer of thermoplastic resin comprises a continuous sheet of material.

50. The processing substrate of claim 49, wherein the thermoplastic resin is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

51. A method of forming a disposable cutting surface, the method comprising the steps of:

providing a first material having a liquid-permeable, cut-resistant surface that can withstand cutting by a serrated knife without substantial compromise of the first material;

providing a second material disposed adjacent the first material and having a liquid-absorbent portion; and

providing a third material disposed adjacent the second material and having a liquid-impermeable surface.

52. The method of claim 51, wherein the step of providing a first material comprises the step of forming a first thermoplastic layer.

53. The method of claim 52, wherein the step of providing a second material comprises the step of providing a cellulosic material.

54. The method of claim 53, wherein the step of providing a third material comprises the step of forming a second thermoplastic layer.

55. The method of claim 52, wherein the step of forming the first thermoplastic layer comprises the steps of extruding streams of thermoplastic onto a web of the cellulosic material and deforming the streams of thermoplastic.

56. The method of claim 55, wherein the step of deforming the streams of thermoplastic comprises the step of contacting the streams with at least one roll.

57. The method of claim 56, wherein the roll has a plurality of protrusions thereon that spread the streams of thermoplastic.

58. The method of claim 57, wherein the protrusions are diamond-shaped.

59. A method of making a disposable cutting sheet, the method comprising the steps of:

providing a web of liquid absorbent material;

depositing a first material onto a first side of the web to form a cut-resistant surface *in* situ on the web; and

depositing a second material on a second side of the web to form a barrier surface.

60. The method of claim 59, including the further step of deforming the first material after depositing of such material on the web.

61. The method of claim 60, wherein the step of deforming comprises the step of passing the web through rolls.

62. The method of claim 61, wherein one of the rolls includes protrusions on a surface thereof.

63. The method of claim 59, wherein the step of depositing the first material comprises the step of extruding molten thermoplastic onto the web.

64. The method of claim 63, wherein the thermoplastic is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

65. The method of claim 59, wherein the step of depositing the second material comprises the step of extruding molten thermoplastic onto the web.

66. The method of claim 65, wherein the thermoplastic is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

67. The method of claim 59, wherein the web comprises cellulosic material.

68. The method of claim 59, further including the step of cutting the web after depositing the second material onto the web.

69. A method of processing a fibrous protein material, the method comprising the steps of:

providing a single-use processing surface comprising a first material having a liquid-permeable, cut-resistant surface, a second material disposed adjacent the first material and having a liquid-absorbent portion and a third material disposed adjacent the second material and having a liquid-impermeable surface;

placing the fibrous protein material on the processing surface;

cutting the fibrous protein material while such material is on the processing surface;

removing the fibrous protein material from the processing surface; and

disposing the processing surface after removal of the fibrous protein material therefrom.

70. The method of claim 58, wherein the step of cutting results in creation of waste pieces of the fibrous protein material and including the further step of rolling up the processing surface to capture the waste pieces before the step of disposing.

71. The method of claim 70, wherein the step of providing comprises the step of forming the first material and the third material *in situ* on the second material.

72. A method of forming a disposable cutting surface, the method comprising the steps of:

providing a liquid absorbent material ;

forming a liquid-permeable, cut-resistant surface that can withstand cutting by a

serrated knife without substantial compromise of the first material *in situ* on the liquid absorbent material; and

providing a liquid impermeable material adjacent the liquid absorbent material.

73. The method of claim 72, wherein the step of forming comprises the step of depositing a first thermoplastic layer.

74. The method of claim 73, wherein the step of providing the liquid absorbent material comprises the step of providing a cellulosic material.

75. The method of claim 74, wherein the step of providing the liquid impermeable material comprises the step of forming a second thermoplastic layer.

76. The method of claim 75, wherein the step of depositing the first thermoplastic layer comprises the steps of extruding streams of thermoplastic onto a web of the cellulosic material and deforming the streams of thermoplastic.

77. The method of claim 76, wherein the step of deforming the streams of thermoplastic comprises the step of contacting the streams with at least one roll.

78. The method of claim 77, wherein the roll has a plurality of protrusions thereon that spread the streams of thermoplastic.

79. The method of claim 78, wherein the protrusions are diamond-shaped.

80. A processing substrate, comprising:

a first material having a liquid-permeable surface comprising a sheet of continuous film having holes formed therein;

a second material disposed adjacent the first material and having a liquid-absorbent portion; and

a third material disposed adjacent the second material and having a iquid-impermeable surface.

81. The processing substrate of claim 80, wherein the liquid absorbent portion is disposed between the liquid permeable surface and the liquid impermeable surface.

82. The processing substrate of claim 81, wherein the first material comprises thermoplastic resin.

83. The processing substrate of claim 82, wherein the thermoplastic resin is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

84. The processing substrate of claim 82, wherein the holes in the continuous film are formed by punching.

85. The processing substrate of claim 82, wherein the holes in the continuous film are formed by perforating.

86. The processing substrate of claim 82, wherein the second material comprises cellulosic material.

87. The processing substrate of claim 86, wherein the cellulosic material comprises tissue.

88. A cutting surface, comprising:

a first layer having a liquid-permeable, cut-resistant surface comprising a continuous film having holes formed therein;

a second layer disposed adjacent the first layer and having a liquid-absorbent portion; and

a third layer disposed adjacent the second layer and having a liquid-impermeable surface.

89. The processing substrate of claim 88, wherein the second layer is disposed between the first and third layers.

90. The processing substrate of claim 89, wherein the first layer is made of thermoplastic resin.

91. The processing substrate of claim 90, wherein the thermoplastic resin is selected from the group consisting of polyolefins, polyesters, polystyrene, polyvinyl alcohol, polyvinyl chloride, nylon, polyacrylonitrile, ABS and ethylvinylacetate.

92. The processing substrate of claim 91, wherein the holes in the continuous film are formed by punching.

93. The processing substrate of claim 91, wherein the holes in the continuous film are formed by perforating.

94. The processing substrate of claim 90, wherein the second layer is made of cellulosic material.

95. The processing substrate of claim 94, wherein the cellulosic material comprises tissue.

96. A method of forming a cutting surface, the method comprising the steps of:

providing a first material comprising a continuous sheet of thermoplastic having holes formed therein wherein the first material includes a liquid-permeable, cut-resistant surface;

providing a second material disposed adjacent the first material and having a liquid-absorbent portion; and

providing a third material disposed adjacent the second material and having a liquid-impermeable surface.

97. The method of claim 96, wherein the step of providing the second material comprises the step of providing a cellulosic material.

98. The method of claim 97, wherein the step of providing the third material comprises the step of forming a thermoplastic layer.

99. A method of processing an item, the method comprising the steps of:

providing a processing surface comprising a liquid absorbent material, a cut resistant, liquid permeable material formed *in situ* on the liquid absorbent material and a third material disposed adjacent the liquid absorbent material and having a liquid-impermeable surface;

placing the item on the processing surface;

processing the item while the item is on the processing surface;

removing the item from the processing surface; and

disposing the processing surface after removal of the item therefrom.

100. The method of claim 99, wherein the step of processing results in creation of waste pieces and including the further step of rolling up the processing surface to capture the waste pieces before the step of disposing.